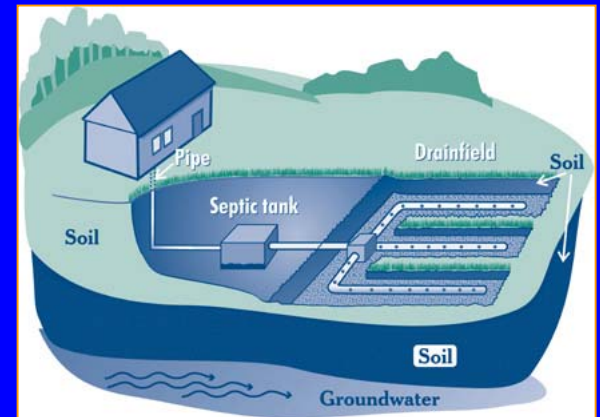


Septic Systems In Coastal South Carolina

For The Real Estate Professional



Crash Course Outline

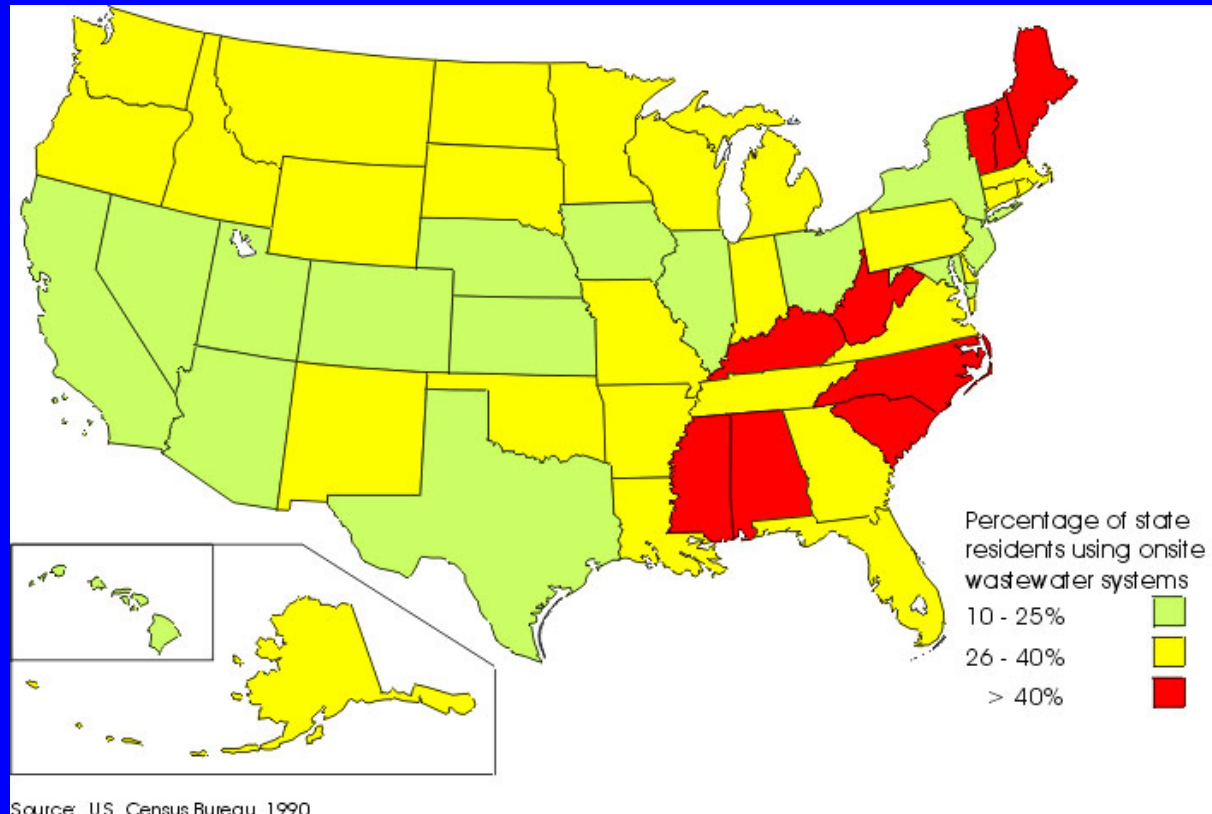
- National / local perspective
 - Typical septic system questions
 - Problem identification
 - Questions for you to ask a client
-



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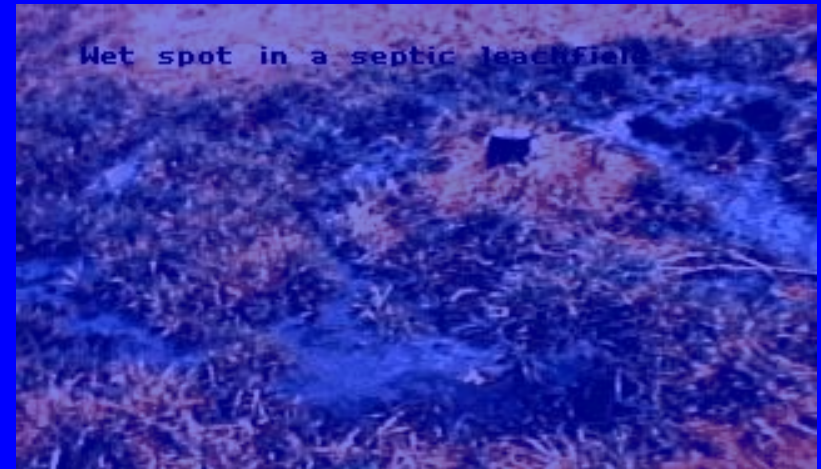


Percentage of State Residents Using Septic Systems



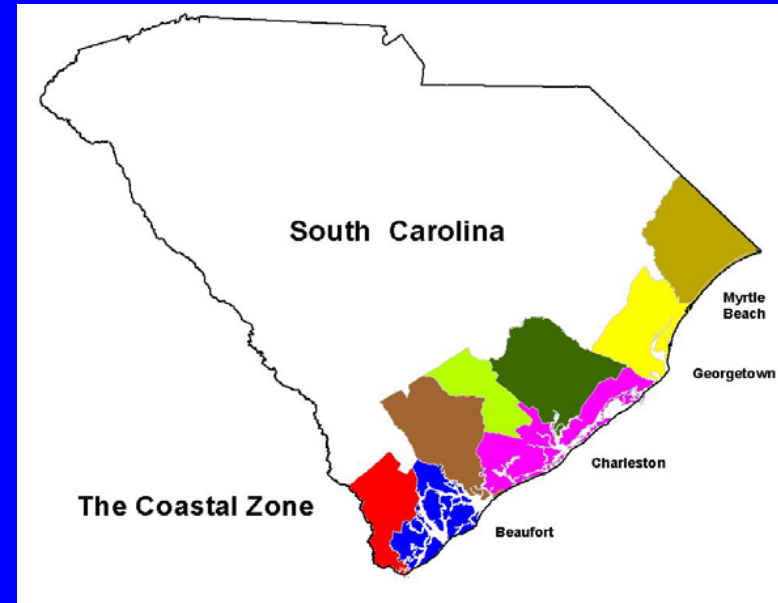
Water Quality Problems on a National Scale

- 10-30% of systems failing annually
- At least 10% of systems >30 yrs. old



SC Coastal Living

- 8-county coastal zone covers 23% of state's total land area
- 981,000 residents *plus* 17 million visitors annually
- 500,000 more residents in coastal zone in 20 years
- By 2010, one-third of state's population will live in coastal zone



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Typical septic system questions:

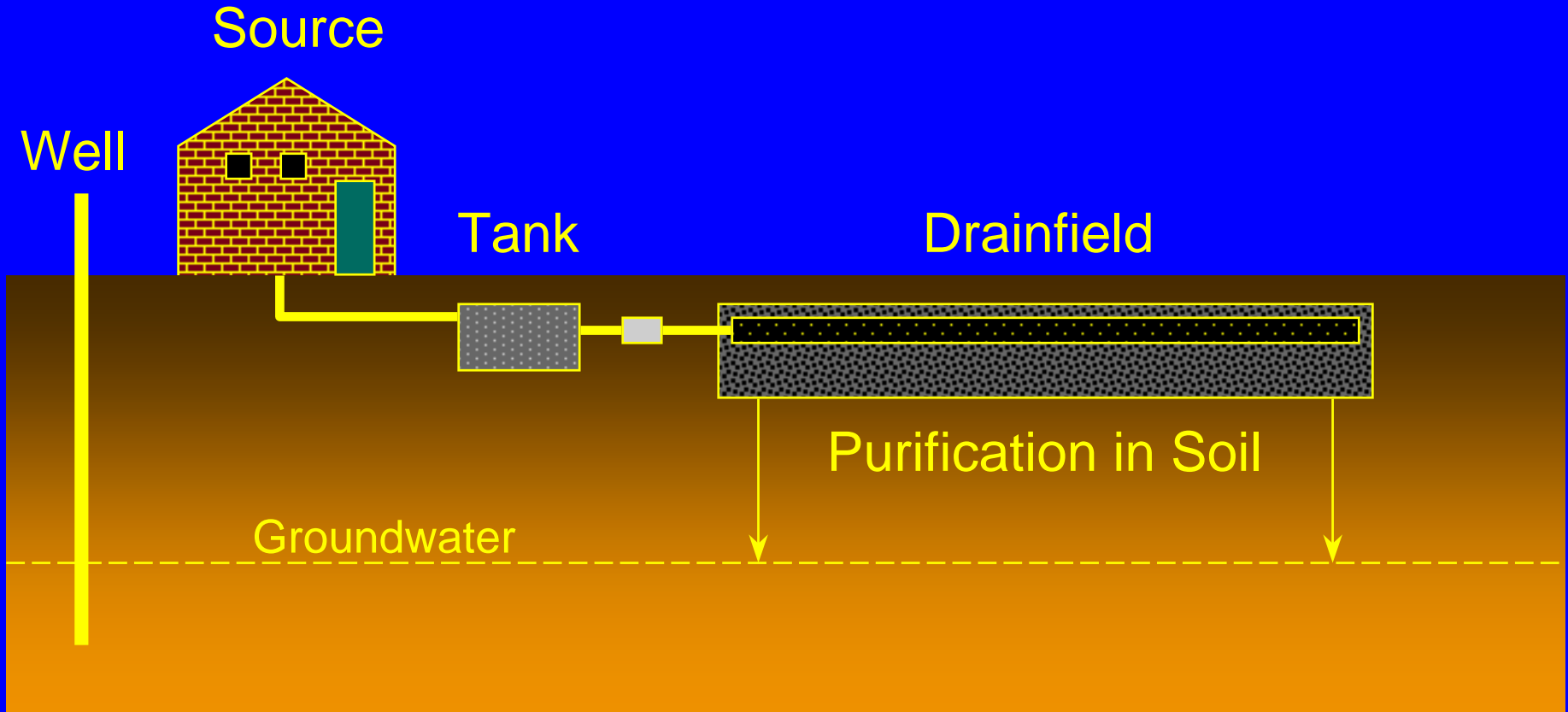
- What is a septic system?
- Why use a septic system?
- How does a septic system work?
- Are there different types of septic systems?
- Where are septic systems used and how big are they?
- How do I know where the septic system is located?
- Do I need to do anything to my septic system?
- How do I identify a problem?



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What is a septic system?



Why use a septic system?

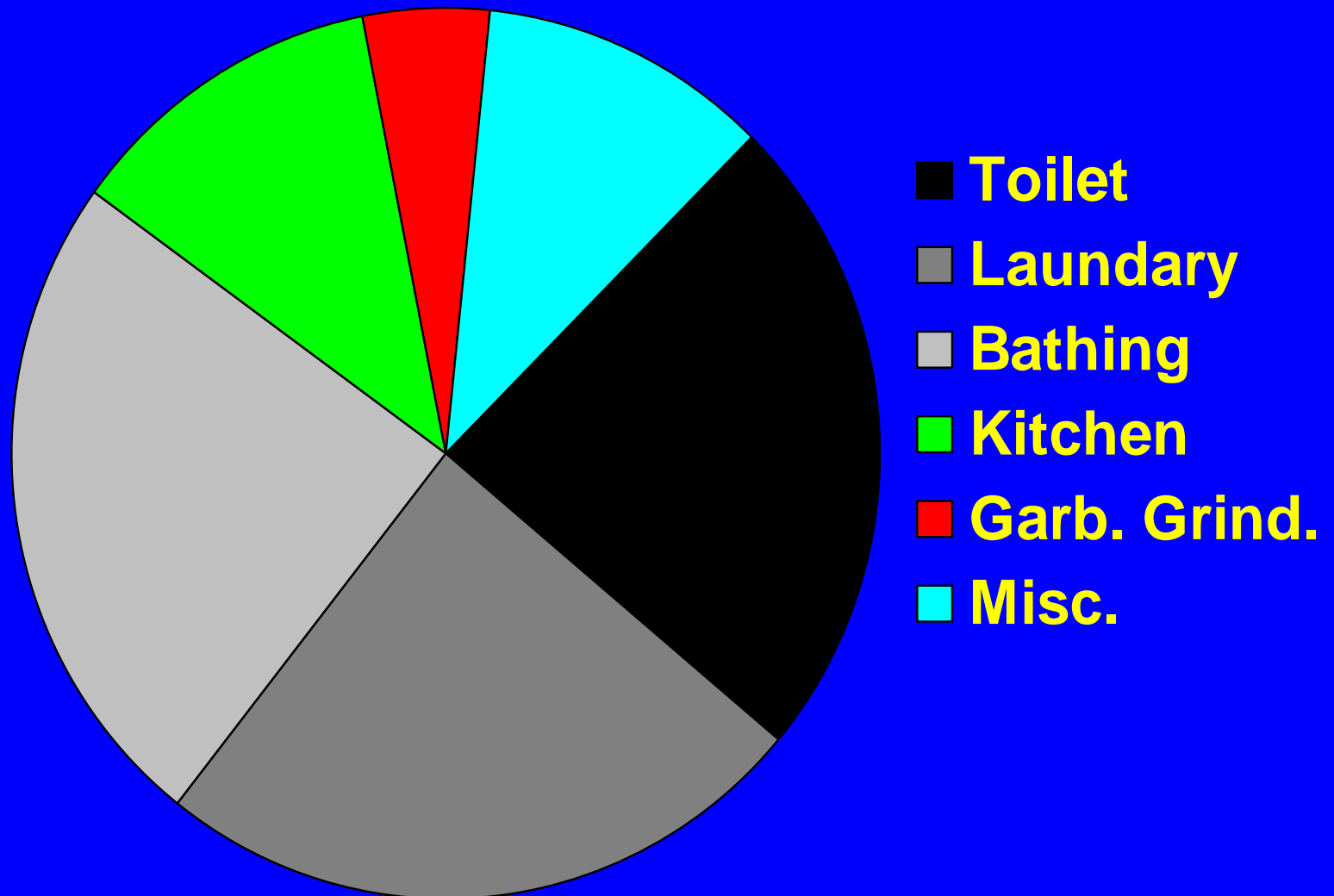
- Safely treat and dispose of sewage
- Protect your family's health
- Protect public health in the community
- Keep the environment clean
- Help keep housing affordable



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Composition of Domestic Wastewater



How does a septic system work?



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Septic Tank

- Retain wastewater
- Separate & settle solids
- Anaerobic digestion
- Protect drainfield



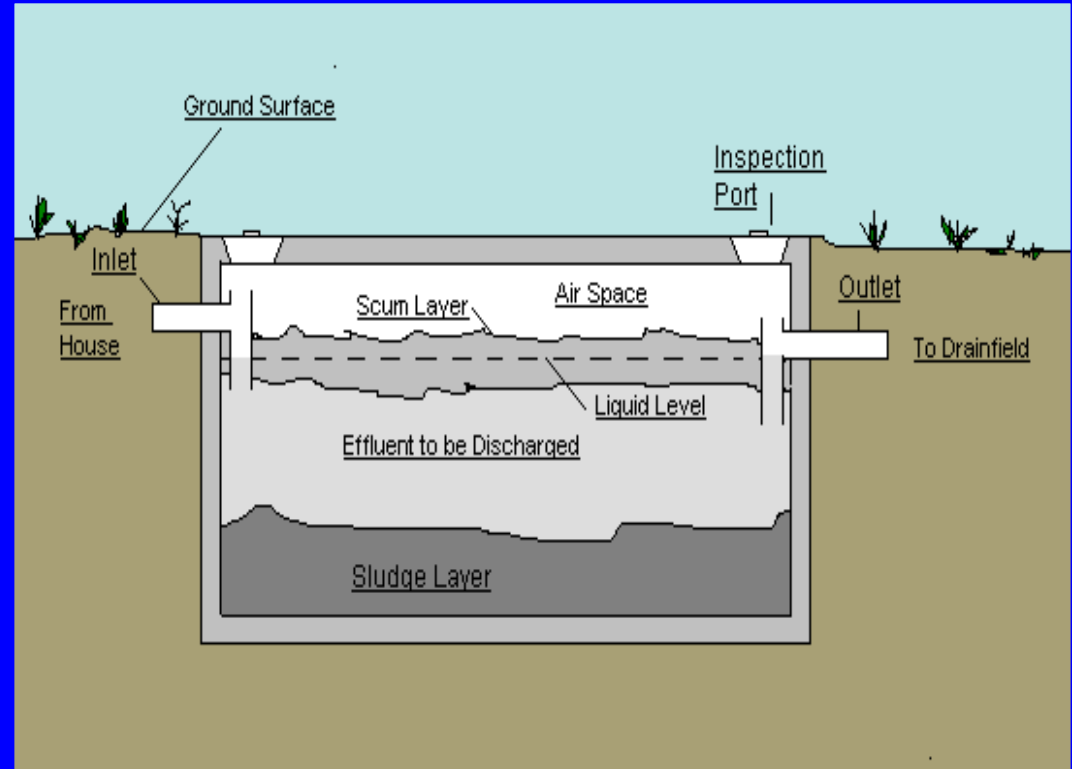
Tees and Baffles

- Inlet

- Reduces agitation
- Reduces short circuiting

- Outlet

- Bottom in clarified zone
- Keeps scum and sludge out of drainfield



PUMP TANK TO PROTECT DRAINFIELD & SOIL!

Broken tee



Intact tee



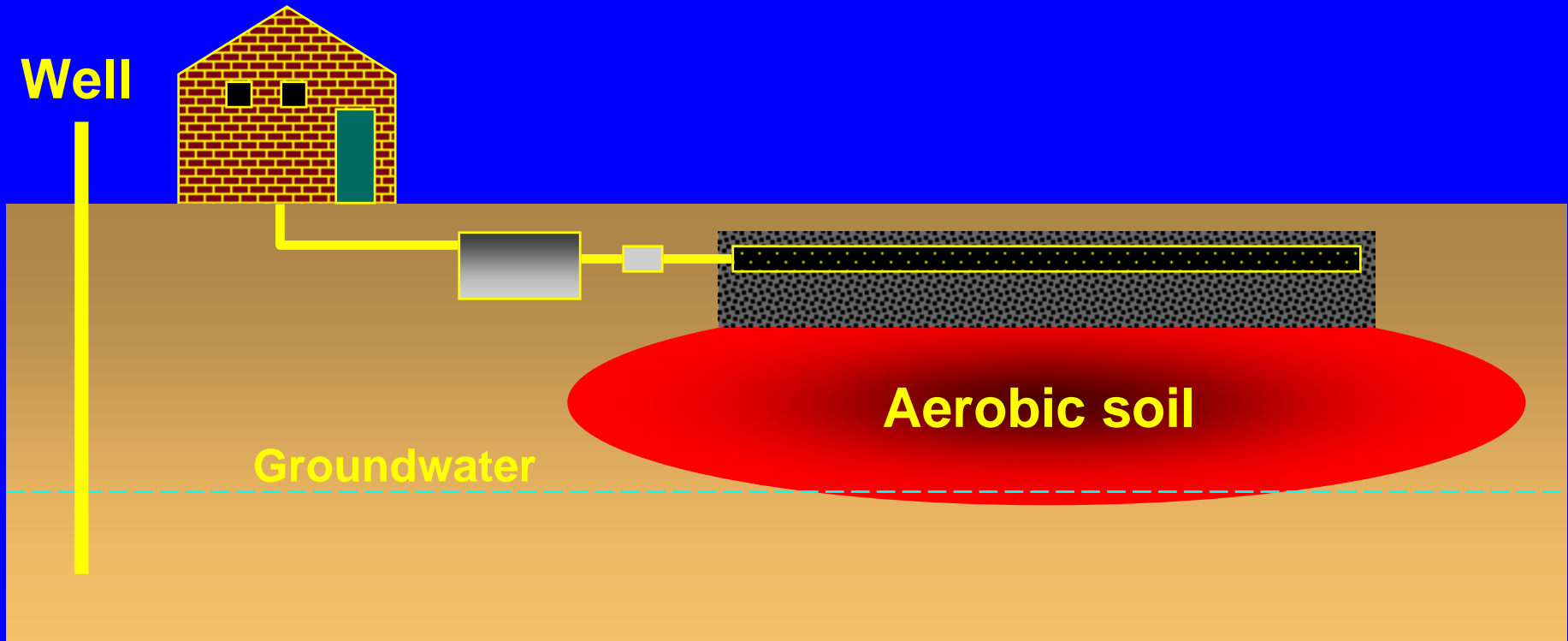
Drainfield



- Distribute wastewater over treatment area
 - Size is important
-



Soil - Aerobic Zone



- Provides treatment of bad stuff in wastewater
- Needs oxygen – not solids or grease or cars!

Types of Septic Systems

- **Conventional or gravity systems**
 - Standard design
 - Modifications
- **Pump systems**
- **Experimental / repair systems**



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Where can a septic system be used?



How do I get a permit?



Why doesn't my land perc?

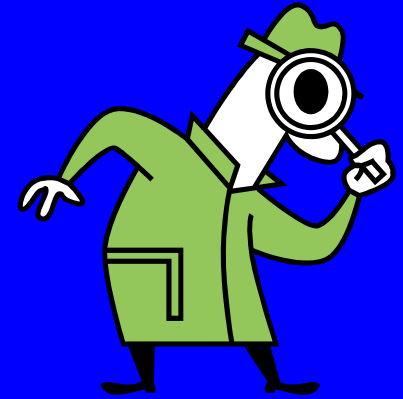
Individual Systems – R.61-56

- Soil description method replaced “perc” test (late 1970’s).
- Lots must meet minimum site conditions to get a permit.
- Permit to construct must be issued before building construction can begin.



Individual Systems – R.61-56

- New system must pass final inspection before permanent power and water is hooked up.
- Repairs, extensions, and alterations may require permit – ask DHEC.
- Required sewer hook-up potential repair solution if accessible.
- No maintenance requirements!!



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Subdivisions – R. 61-57 *revised*

- 5 lots or more
- Exempt - all lots > 5 acres
- Accessible sewer – no annexation required
- No lots sold w/out subdivision approval by DHEC
- New standards for public hearing



Subdivision Development

- DHEC cooperates local jurisdictions:
 - County Planning and Zoning Ordinances
 - Various Town/City Ordinances
 - Water or Sewer Districts or Authorities
 - Councils of Governments: B-C-D COG
- Pre-application meeting:
 - wastewater system, water supply
 - roads
 - drainage / stormwater



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How large is a typical system?

- Vary according to soil and house size (number of bedrooms).
- There should be enough area for a repair area as well as the present system.
- Distances to streams, lakes, wells, etc. are also considered.
- Every system is designed for the specific soil and site conditions.



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How to Locate a Septic System

- Check the original permit information
- Look under the house to determine where sewer lines exit
- Tank is often 5-10' away from house near where sewer lines exit
- Look for regular green stripes in the lawn, these are the drain lines
- Use a tile probe or thin rod to locate lines, septic tank, and D-box
 - *check for utility lines first!*



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Locate System with Probe



Now draw a map!

Look for greener stripes



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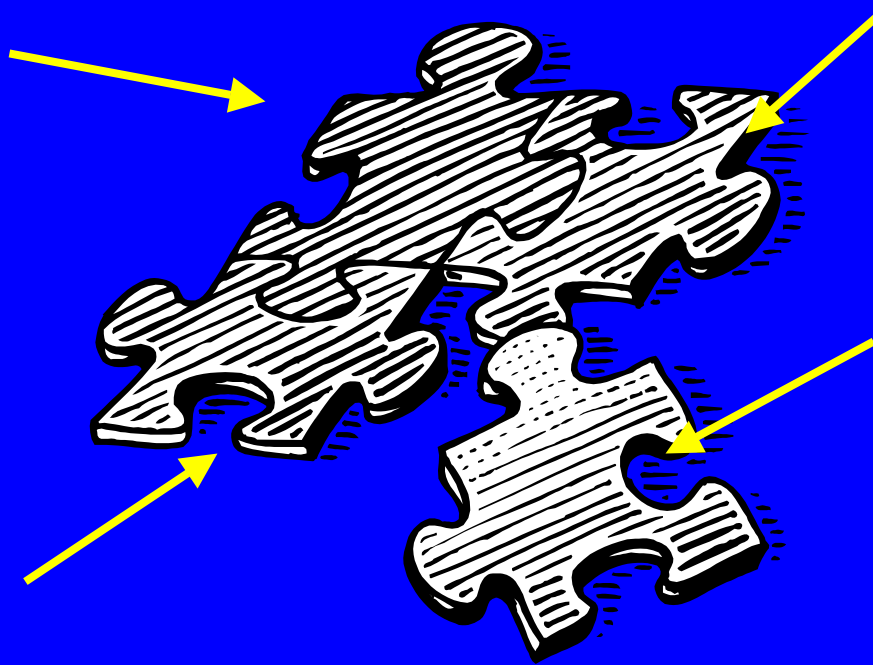
Septic Systems Work Great With...

Proper
Siting

Proper
Installation

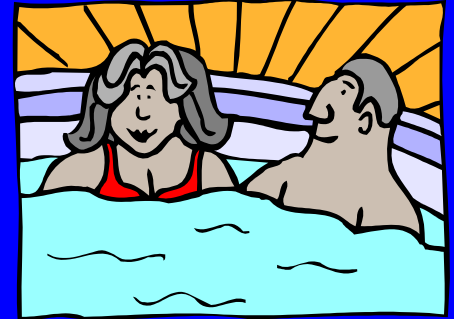
Proper
Design

Proper
Operation &
Maintenance
(O&M)



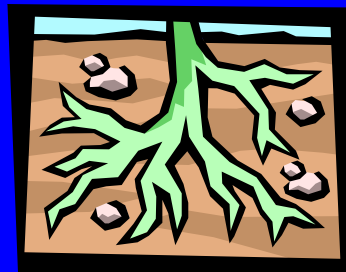
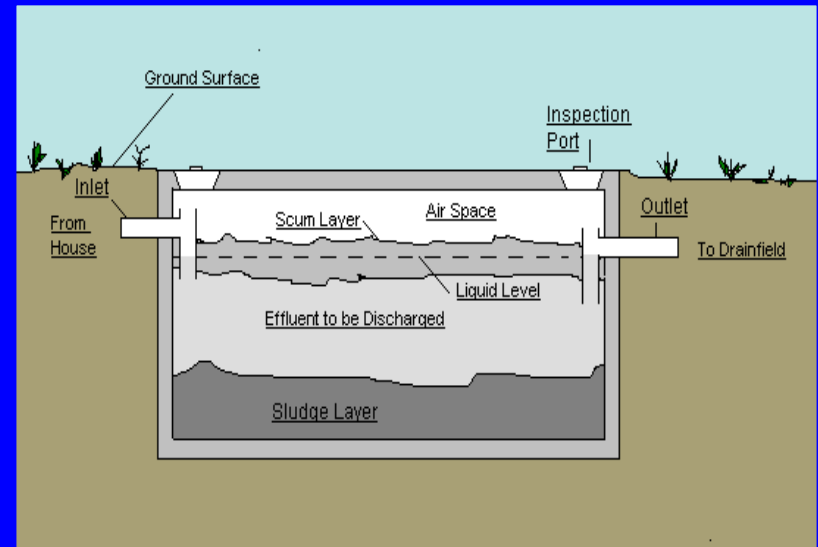
Proper Operation & Maintenance

- Responsibility of homeowner
- Know what can & can't go down drain
- Don't overload system
- Don't drive over system



Proper Operation & Maintenance

- Prevent problems before they happen
- Pump out solids from tank every 3-5 years
- Protect drainfield from damage
 - roots
 - excess water
 - excess solids



Maintenance is not...

putting additives in
the system to take
the place of
pumping.

Additives can harm
the system AND
waste people's
money!



O&M Do's & Don'ts

DO:

- Conserve water
- Repair leaky plumbing
- Divert surface water from system
- Have tank inspected & pumped regularly

DON'T

- × Use additives
- × Use garbage disp.
- × Drive or park over system
- × Plant trees nearby
- × Pave or build over
- × Dispose of certain items...



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System's Best Friend



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Recognizing and Identifying Problems



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Red flags you can see.

- Inside of the house
- Outside of the house
- Drainfield
- Construction
- Maintenance history



Inside of the House

- Leaky fixtures
- Slow drains
- Garbage grinder



Outside of the House

- Gutters and down spouts
- Driveway and patio
- Irrigation system
- Landscaping – surface drainage
- Out buildings
- Pool





Drainfield and Tank Area

- Surfacing effluent
- Wet spots
- Areas of standing water
- Growth patterns
 - Location
 - Pattern
- Bull's-eye patterns
- Odor



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Wet Spots



Surfacing

Straight Pipes Are Illegal!



Construction

- Recent additions
- Out buildings
- New cable lines, etc.
- New water line, gas line, etc.



Maintenance History

- Last time pumped
- How often



Maintenance Record

USE THE FOLLOWING SPACES to record information about your own septic system. Some of this can be copied off of your Permit which might be obtained from your county health department. Having good maintenance records can be a positive selling point for your home when the time comes (wouldn't you rather buy a car that has a proven maintenance record?).

Permit Number: _____

Issued to: _____

Date Issued: _____

Address: _____

System Description: _____

Drainfield Type: _____

- ☐ Conventional Trenches
- ☐ Shallow Trenches
- ☐ Mound
- ☐ Bed
- ☐ Ultra-shallow Trenches
- ☐ Other _____

Septic Tank Size (gallons) _____

Pump Tank Size (gallons) _____

Drainfield Dimensions: _____

Number of Trenches: _____

Trench Length: _____

Septic System Installer: _____

Septic System Pumper: _____

Name: _____

Name: _____

Address: _____

Address: _____

Telephone: _____

Telephone: _____

Date System Installed: _____

SYSTEM MAINTENANCE RECORD

DATE	WORK DESCRIPTION	FIRM	COST

This publication is based in part on similar publications by the National Onsite Wastewater Recycling Association (NOWRA), North Carolina Cooperative Extension Service, Cornell Cooperative Extension, and the South Carolina Department of Health and Environmental Control (SCDHEC). This project was funded by a grant from the National Oceanic and Atmospheric Administration (NOAA). The Florida Department of Health (FDOH), Bureau of Onsite Sewage Programs, and the Florida Department of Environmental Protection (FDEP), Nonpoint Source Management Program staff members provided technical review and valuable input. This folder was prepared and published by the FDEP Nonpoint Source Management and Water Quality Standards Section. Graphic design and layout for this folder was provided by the SCDHEC Media Services Art/Graphics Department, a Division of the Bureau of Business Management. For more information, contact your county health department or FDOH, Bureau of Onsite Sewage at (850) 245-4070.

Questions to Ask

- Standard disclosure statement
- Maintenance history
- Location, location, location



Become a septic system detective.



- Ask questions listed in Coast*A*Syst about the septic system
- Look in the house for red flags
- Look around the outside of the house for red flags

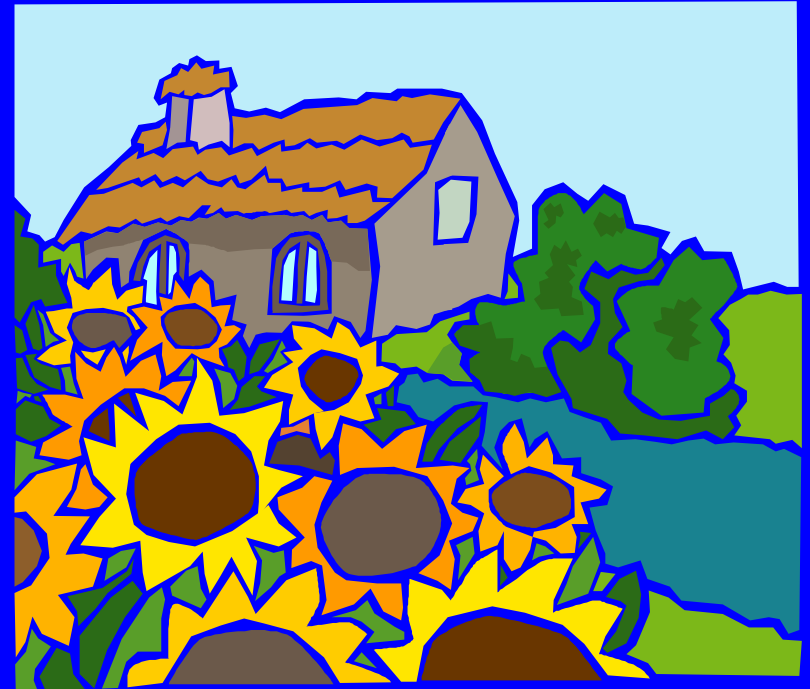


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Goal – Work Well & Last Long

- Know system location
- Keep records of repairs & maintenance
- Educate users on proper operation & maintenance



Where can I go for more information?

- Trident Environmental Health Department (202-7020)
- County Health Department
- OCRM (744-5838)
- www.scdhec.net



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Educational Resources on Septic Systems

- DHEC Fact Sheets / Folder
- DHEC inspector training program - TBA
- Clemson Coast* A* Syst:
www.clemson.edu
- EPA web site: www.epa.gov
- National Small Flows Clearinghouse
www.nesc.wvu.edu



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Early plumbers

The Far Side® August

1879
"Modern" toilet paper, consisting of single squares of coarse paper, is invented by the Scott brothers. (Prior to this, people are forced to ... well, let's not go there.)



Wednesday 30



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